

Waste time to move mountain

Each year the UK produces up to 300 million tonnes of waste. Waste from households accounts for about 30 million tonnes a year with each household on average producing one tonne of rubbish every year. That's the same weight as almost 5 million male African Elephants! Virtually everything we use creates varying degrees of waste throughout its lifecycle. There is waste associated with the extraction, harvesting, manufacture or transport of materials, waste associated with using a product, e.g. a car using oil, or a toy using batteries, and finally the negative impacts of waste disposal. The extraction of resources often impacts negatively upon Southern countries through mining or logging for example. Yet the people of Southern countries themselves are often the least wasteful.

Our increased wealth and prosperity have come at a price. We have built mountains of waste in the North and left scarred environments and societies in the South. These activities aim to provide children and schools with knowledge, understanding and actions on how we can dump our throwaway society and wage war on waste.

There have been substantial increases in recycling rates in the UK in recent years. Almost half of all household waste is now recycled, though percentages vary between different regions of the UK. However, this still leaves a lot of waste that ends up in landfill sites or being burnt in incinerators. Both processes are environmentally damaging. In landfill, waste rots down to produce methane - a powerful 'greenhouse gas' – and poisonous liquids. Burning waste can produce health-harming emissions and only reduces the weight of the waste by approximately two thirds. The toxic ash left behind must be got rid of – usually it is sent to landfill sites.

So, step up recycling?

Recycling reduces pollution, saves energy and reduces costs while slowing down the rate at which non-renewable resources are depleted. Recycling saves resources. One tonne of recycled newsprint is equivalent to almost a dozen trees. Recycling half of the world's paper would meet over 70% of global demand for new paper and save 8 million hectares of forest. Recycling saves energy. It requires 20-25 times more energy to make aluminium by smelting bauxite than it does to melt and produce 'new' aluminium from scrap. Recycling also creates jobs. At least 30,000 people are involved in recycling aluminium in the US; twice the number employed in primary aluminium production.

Yet, despite the obvious benefits, recycling is in fact the lowest priority in the '4 Rs' waste minimisation hierarchy. The most important priority is to **reduce** the amount of waste we create in the first place. Next comes **re-use**, followed by **repair** and finally **recycling**.

The South – already there

Rarely acknowledged is the fact that countries in the South create some of the lowest levels of waste. This is because thousands of poor people earn a living by collecting materials dumped at public waste-disposal sites or in the streets for turning into something useful. Resources also tend to be reused and repaired to a much greater extent. Many poorer countries for example operate a deposit scheme on bottled drinks while Cuba is famous for keeping its ancient fleet of American cars running. Most significantly Southern countries tend to produce much less waste in the first place and use considerably less energy. Mexico produces just half the waste per person per year as the US, and Bangladesh has the lowest consumption of energy per person per year in the world.

Most Southern countries haven't deliberately chosen to be low waste, reuse, and repair economies. They have ended up as such due to poverty and limited resources. But perhaps it is time for the affluent, and consequently wasteful, economies of the North to learn some lessons in waste management from the South.

the paper bag game	Literacy Waste	
A literacy activity through a simulation game exploring child labour in Southern countries	45 mins	Year 3 and 4

Suggested lesson structure

This literacy activity focuses on writing instructions based on both an examination of instructional texts and relating instruction writing to the completion of a practical task, **the paper bag game**

Playing the paper bag game

Children take on the role of child labourers attempting to earn a living by making paper bags for shopkeepers to use.

Before the game clearly explain the rules and provide a stage by stage practical demonstration of how to make the bags (see box). It may be useful for each group to have bags at different stages of completion to refer to. Each child could make a bag as the process is explained stage by stage. This is an important part of the activity as children will be asked to write the instructions on how to make a paper bag.

Points for discussion

The paper bag game provides an opportunity to discuss issues of child labour and why some children are forced to work rather than attend school. The advantages and disadvantages of such work can also be considered.

Potential advantages: reusing resources; using a biodegradable material for bags; an easy way for children to support their families and generate much needed income, learning to work co-operatively together.

Potential disadvantages: children working rather than attending school; very low rates of pay keep children and their families very poor; children are at the mercy of the shopkeeper.

Feelings, based on the game, can also be explored. For example:

- Are the rules of the game fair? How could they be made fairer?
- Would the children like to do this work every day instead of going to school? Why/why not?
- How would they or their families spend the limited money they earned? What would be their priorities?
- How well did they work as a group? How could they have worked better?
- What would be the implications to the children, their families and to the environment of the shopkeeper switching to plastic bags?

Literacy activities:

Whole class reading comprehension

Referring back to the paper bag game and/or using a recipe or similar instructional text children should examine the features of instructional texts, such as using a range of organisational devices such as lists, numbering, dashes, bullet points, commas for lists etc.

Group or independent writing activity

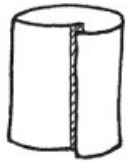
Children should apply the features and conventions of instructional texts to writing clear instructions on how to make the paper bags. Less able children may find it easier to write instructions for the game instead. The instructions provided by Christian Aid could be compared with the children's own instructions at the end of the activity.

Rules for playing the paper bag game

The aim of the game is to make as many paper bags out of old newspaper as possible and earn as much money as possible in a certain time (25 - 40 minutes)

1. Ensure there is a large supply of old newspaper cut to size - half a tabloid sheet is the best size.
2. Divide the class into mixed ability groups of four or five. Provide each group with a large supply of newspaper cut to size, wall paper paste and glue sticks and demonstration bags. Each group must have an appropriate space for making the bags.
3. Explain to children that they represent children from a poor family who live in the slums of Dhaka (Bangladesh) or Calcutta (India). In order to help their families earn enough to survive they make paper bags out of scrap paper and old newspapers which are then sold to local shopkeepers.
4. The teacher takes the role of the shopkeeper. Competition is fierce. With many children making bags, shopkeepers can be choosy about which bags they buy. The shopkeeper must be ruthless, rejecting any bags that are not made well or show signs of weakness. As a guide, the bags should be strong enough to hold dried rice without any leakage.
5. The shopkeeper only pays for bags in bundles of ten. All bags in the bundle must be of high quality in order for the children to be paid; if not the whole bundle is rejected and sent back to the group. **Each acceptable bundle of ten bags earns the group 5 pence.**
6. Towards the end of the game the rules could be changed to demonstrate the power of the shopkeeper. The price paid for bags could be reduced to 2p per ten or the shopkeeper could decide to switch to plastic bags (though note that Bangladesh has banned these).

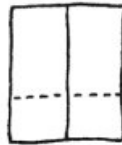
How to make a paper bag



1. Fold the sides of the paper to the middle, overlapping by about 2cm.



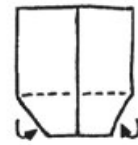
2. Paste one edge. Stick down the overlapping edge.



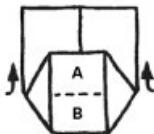
3. Turn up the bottom edge about one-third of the way up the bag. Crease it then unfold it.



4. Fold up the bottom corners to the crease. Unfold them.



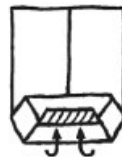
5. Tuck the corners up inside the tube.



6. You now have a tube with two flaps, A and B.



7. Fold the upper flap A down on itself to the middle line.



8. Paste the shaded edge of flap B very carefully.



9. Fold it over flap A and stick it down.

Note: If you want to strengthen the bag, stick a strip of paper across the bottom.

The rules supplied for the paper bag game are printed courtesy of Christian Aid. The paper bag game is one of a range of simulation games for different age groups provided by Christian Aid, all under £5. Ring 020 7523 2229 to discuss your needs.

	Knowledge and Understanding		Skills		Values and Attitudes
<input checked="" type="checkbox"/>	Social justice and equity	<input checked="" type="checkbox"/>	Critical thinking	<input checked="" type="checkbox"/>	Sense of identity and self-esteem
<input type="checkbox"/>	Diversity	<input type="checkbox"/>	Ability to argue effectively	<input checked="" type="checkbox"/>	Empathy and sense of common humanity
<input type="checkbox"/>	Globalisation and Interdependence	<input checked="" type="checkbox"/>	Ability to challenge injustice & inequalities	<input checked="" type="checkbox"/>	Commitment to social justice and equity
<input type="checkbox"/>	Sustainable development	<input checked="" type="checkbox"/>	Respect for people and things	<input type="checkbox"/>	Valuing and respecting diversity

<input type="checkbox"/>	Peace and conflict	<input checked="" type="checkbox"/>	Co-operation and conflict resolution	<input type="checkbox"/>	Concern for the environment and commitment to sustainable development
				<input type="checkbox"/>	Belief that people can make a difference

Polythene: bags of trouble	Literacy Waste	
A literacy activity encouraging children to reflect on the implications of banning plastic bags to protect the environment	45 mins	Year 5 and 6

Suggested lesson structure - Whole class reading comprehension

The focus of this activity is on critically evaluating a piece of non-fiction journalistic writing for the construction of arguments, persuasive examples and how different points of view and potential objections are handled by the writer. All of this is set within the context of a global environmental problem.

The text can be used to consider the following questions. (Suggested answers after each question)

1. The writer begins by stating that the ban on polythene bags is to save the city of Dhaka from ‘imminent environmental disaster’. What persuasive examples does he use as evidence for this?

‘...millions of polythene bags disposed of every day...clogging Dhaka’s drainage system...’ ‘Every day nearly ten million polythene bags are disposed of by Dhaka residents’ ‘...an overcrowded city which is already suffering from high levels of air pollution and other kinds of environmental hazards’.

The writer, although not using any direct quotes, uses different groups to present the arguments: the Government Environment Minister, Environmental groups, Dhaka residents.

2. Is the article balanced or is it biased in favour of a particular viewpoint ?

Whether the article leans in favour of ‘environmental groups’ and the government ban is questionable. However, the article puts several points of view from different groups: the government, environmental groups, and residents. It reports the government’s view - that plastic bags are a danger because they clog up the drainage; the worries of environmental groups – worried that government will not enforce the ban; the views of residents – who find the polythene bags useful and cheap and suggests that 18,000 workers who make polythene bags will have to lose their jobs.

3. Who might object to the ban? At which points in the article does the writer pre-empt possible questions or objections?

He answers possible objections from residents about what they will use instead (‘...promoting jute bags as an alternative to polythene and people have responded positively’) and concerns from people about job losses (‘[the government] had to think of alternative employment for nearly 18,000 workers...’)

Additional contextual questions:

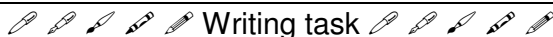
Why are polythene bags a problem?

Polythene is a form of plastic and it is non-biodegradable: it won’t rot.

Why are polythene bags such a big problem for the city of Dhaka?

Dhaka is prone to severe flooding and when polythene bags block drains water will be prevented from running away so making flooding worse.

Group or independent writing task



The article by Moazzem Hossain mentions a 'massive publicity campaign' to persuade the public not to use polythene bags.

Imagine you are to launch a campaign to try to prevent people in the UK using polythene bags:

- Discuss and decide what arguments you would use to try to persuade people not to use polythene bags.
- What would you suggest people use instead?
- Who do you think would object? What arguments would they use? How would you argue against these objections?

Having thought about these questions and worked out some solutions to them, design a leaflet to try and persuade people not to use polythene bags.

The great poly-bag ban,

An article by Moazzem Hossain, a BBC journalist at the time, working in Dhaka the capital city of Bangladesh

The Bangladesh Government has begun enforcing a complete ban on the sale and use of polythene bags in the capital Dhaka.

Environment Minister Shahajahan Siraj says the decision has been taken to save the city from an imminent environmental disaster.

Environmental groups say millions of polythene bags disposed of every day are clogging Dhaka's drainage system and posing a serious environmental hazard.

Polythene shopping bags were introduced into Bangladesh nearly two decades ago, quickly replacing jute bags traditionally in use in every household of Bangladesh.

A recent study says that in Dhaka an average household uses about four polythene bags a day.

Every day nearly ten million polythene bags are disposed of by Dhaka residents.

These disposed polythene bags have posed a new environmental threat for an overcrowded city which is already suffering from high levels of air pollution and other kinds of environmental hazards.

The Environment Ministry has launched a massive publicity campaign to persuade the public not to use polythene bags.

Environment Minister Shahajahan Siraj says the campaign has been successful in raising the awareness of the public about the hazards of the bags. Mr Siraj says they are promoting jute bags as an alternative to polythene and people have responded positively.

Despite the campaign, a large number of Dhaka residents were seen on Tuesday using polythene bags which they say are user friendly and cheaper.

Environmental groups say that, without tougher environmental legislation, it will be very difficult for the government to attain any success in its fight against polythene.

Mr Siraj said the government would propose a bill in the next session of the parliament to ban the production of polythene bags.

He warned the measure could take some time as they had to think of alternative employment for nearly 18,000 workers now employed in the industry.

Bags of plastic facts

Plastic, plastic everywhere:

On land...

- Around 6 billion plastic bags are handed out to shoppers in Britain every year, that's about 100 bags per adult each year

And at sea...

- Turtles often die because they swallow plastic bags that end up floating in the sea; they mistake them for jellyfish

- Seabirds are often found with plastic fragments in their stomachs and plastic molecules in their muscles.
- In California sea lions often end up in with plastic wrapped around their necks

Getting tough in Bombay, India...

- Plastic bags have been banned for similar reasons to Dhaka. They litter the streets and block the drains, causing floods when the heavy rains fall
- Traders at vegetable markets now hand out recycled paper bags instead. This is a good way of using old paper and the bags are biodegradable (they will rot)
- Shops found giving out plastic bags or factories found making them can be closed down for a month as a punishment

In the UK...

- There is now a levy or tax on all plastic bags in Wales, Northern Ireland and the Irish Republic and one planned in Scotland... but still no such tax in England!
- The 5p charge on every plastic bag in Wales has led to a reduction in use of up to 90 per cent.

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Further activities

Sing your way to recycling

You all know the tune...

What shall we do with our old glass bottles (x3)
Early in the morning?

Bring them to the bottle bank, RECYCLE (x3)
Early in the morning

What shall we do with our carrot peelings (x3)
Early in the morning?

Put them on the compost heap, RECYCLE (x3)
Early in the morning

What shall we do with our old newspapers (x3)
Early in the morning?

Take them to the paper-bank, RECYCLE (x3)
Early in the morning

Based on a poem by Judith Nicholls in *Earthways*, *Earthwise*, Poems on Conservation published by Oxford University Press

Taking Action!

School Waste Reduction Action Plan

Here are some ideas that might be included in an action plan to reduce waste in school:

- Set up a recycling scheme for paper in the school
- Ensure both sides of all paper is used before paper is recycled
- Use scrap paper for rough work and casual notes
- Reuse envelopes
- Have separate bins in the playground and in classrooms for different types of rubbish
- Decant or make up drinks from large bottles and put them into smaller reusable bottles rather than buying individual cartons/cans/bottles
- Avoid heavily packaged food for packed lunches; use a lunch box which can be reused again and again rather than tin foil or plastic
- Reuse plastic pots, trays and other packaging for storage of classroom equipment, in artwork or for growing plants in
- Make sure that a collection/recycling method exists in school for the collection of glass and aluminium cans or encourage children to take cans home for recycling
- Ensure that reusing and recycling of old/outgrown clothes is encouraged, e.g. second hand collections available to children, collection of old clothes for charity shops
- Encourage children to save old toys for charity or for school fetes or toy sale days, which also generate income for the school etc.
- Start a school compost heap/bin for green waste